Message

From: Morrie Lee [ml90@chrysler.com]
Sent: 3/9/2012 1:49:09 PM
To: Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]
Subject: RE: Hood Down and Variable speed fan request
Attachments: image001.png

Thank you.

From: Joel Dalton [mailto:Dalton.Joel@epamail.epa.gov]
Sent: Thursday, March 08, 2012 5:37 PM
To: Morrie Lee
Subject: Re: Hood Down and Variable speed fan request

Hello Morrie -

Thank you again for your patience. As discussed unofficially, EPA accepts your proposal to use the variable speed cooling fan with hood down for the 14MY LDV 3.0L diesel DF and certification testing described in your email below, with the understanding that EPA may choose to confirm CRX results either with variable speed fan (most-likely), an alternative site, or perhaps appropriate supplemental cooling.

Let me know if you have any questions or require clarification.

Joel Dalton
US Environmental Protection Agency
734.214.4579

From: Morrie Lee <ml90@chrysler.com>
To: Joel Dalton/AA/USEPA/US@EPA
Cc: Stephen Healy/AA/USEPA/US@EPA
Date: 02/17/2012 03:11 PM
Subject: Hood Down and Variable speed fan request

As a follow up to yesterday's meeting, I am requesting approval of hood down and variable speed fan operation for our 14MY LDV 3.0L diesel DF determination, emissions and fuel economy testing.

*(b) During dynamometer operation, a **fixed speed cooling fan shall be positioned** so as to direct cooling air to the vehicle in an appropriate manner with the engine compartment cover open. In the case of vehicles with front engine compartments, the fan shall be squarely positioned within 12 inches (30.5 centimeters) of the vehicle. In the case of vehicles with rear engine compartments (or if special designs make the above impractical), the cooling fan shall be placed in a position to provide sufficient air to maintain vehicle cooling. The fan capacity shall normally not exceed 5300 cfm (2.50 m3 /sec). However, if the manufacturer can show that during field operation the vehicle receives additional cooling, and that such additional cooling is needed to provide a representative test, the fan capacity may be increased, additional fans used, variable speed fan(s) may be used, and/or the engine compartment cover may be closed, if approved in advance by the Administrator. For example, the hood may be closed to provide adequate air flow to an intercooler through a factory installed hood scoop. Additionally, the Administrator may conduct certification, fuel economy and in-use testing using the additional cooling set-up approved for a specific vehicle.*

Here is a snapshot of intradepartment correspondence summarizing the justification.

Figure 1 – 3.0L WK Diesel operation on the chassis dynamometer with fixed speed and variable speed cooling fan

CONSTANT VEHICLE SPEED DATA						
	Hood Closed, Road Speed Fan			Hood Open, Fixed Speed Fan (8000 cfm - "FTP-type")		
Vehicle speed [mph]	31	47	62	31	47	62
gear engaged	5	7	8	5	7	8
Engine speed [rpm]	1400	1350	1415	1380	1350	1425
Injected fuel [mg/stroke]	9.3	22	27	9.8	21	26
MAF Air temperature [°C]	31	31	32	38	34	32
CAC Temperature [°C]	29	28	30	35	30	29
Ambient temperature [°C]	28	26	27	26	26	25
Coolant temperature [°C]	87	87	87	97	86	87
Oil temperature [°C]	91	90	91	100	94	94
	On the bench with road speed fan, radiator fan does not turn on			On the bench with fixed speed fan, radiator fan turn on		

Please reply with your concurrence or follow-up.

Morrie Lee
Manager - Emissions Certification Assurance
Chrysler Group LLC
T/L: 836-5168 Outside Line: (734) 475-5168
Fax: (734) 475-5260
CIMS: 422-01-11
e-mail: ML90@Chrysler.com